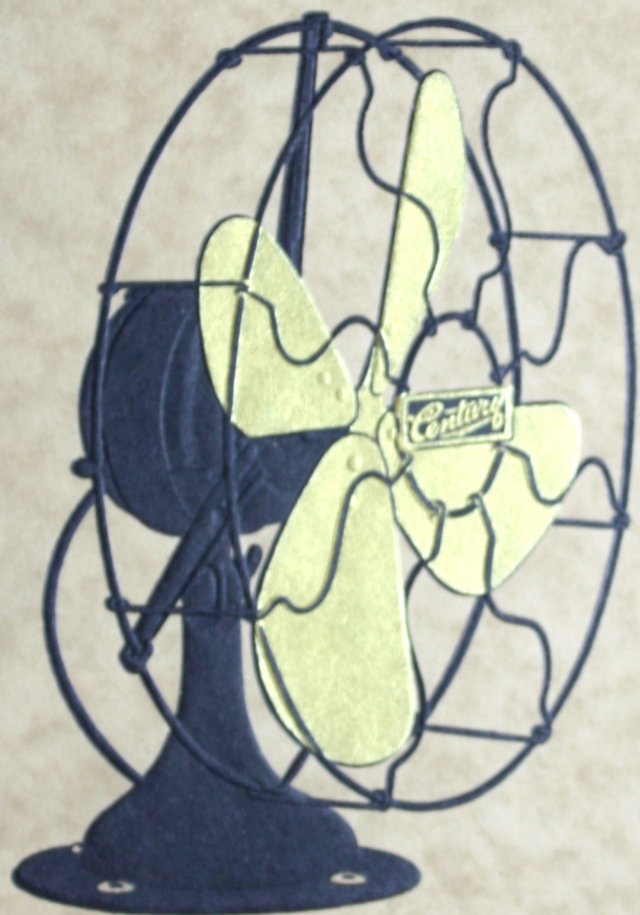


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APR 2 1924

*Century*

ALTERNATING AND DIRECT CURRENT  
FANS

CABLE ADDRESS

"ONEPHASE," ST. LOUIS, U. S. A.

CODES USED

Bentley's  
Lieber's  
Private  
Western Union Universal

Bentley's Appendix  
A. B. C., 5th Edition, Improved  
A. B. C., 5th Edition, 5 Letter  
Western Union 5 Letter

BULLETIN No. 36

CENTURY ELECTRIC COMPANY  
ST. LOUIS, U. S. A.

PRINTED IN U. S. A.



## ALTERNATING AND DIRECT CURRENT FANS

*Are built in the following Types and Sizes:*

Portable, 9, 12 and 16 inch oscillating, three speed.

Portable, 9 and 12 inch stationary, single speed.

Ceiling, 58 inch sweep, 4 blade, three speed.

Ventilating, 16 inch, three speed.

Keep-A-Running ability has been the governing factor in their construction.

Their design and construction is such that when viewed from the standpoint of appearance, efficiency, the amount of air moved, and speed control, they will prove highly satisfactory to all interested in fans.

The fact that all portable fan motors are fully enclosed, insures satisfactory operation in dusty places and even under the most extreme climatic variations of temperature and humidity encountered in tropical countries.

Each part is constructed of the best material adapted to the particular requirement, and is interchangeable through its having been made to fit standard jigs and gauges.

A record is kept of the performance of each fan while being tested, after a substantial period of operation, to determine that it meets the performance limits we have established as standard.





FIG. No. 513

Illustrating 9 and 12 inch Oscillating Multiple Speed Fans



## ALTERNATING AND DIRECT CURRENT PORTABLE FANS

### Construction of Motor Frame

The motors used for operating all *Century* direct and alternating current portable fans are fully enclosed to protect the winding from dirt and moisture in humid climates, where dust and dirt is encountered. The fields are constructed of thin sheet steel laminations.

### Bearings

The bearings are made of phosphor bronze, with ample provision for lubrication.

### Stand

The base, or stand, is made of drawn steel, light in weight, but strong and substantial. The base of the multiple speed fan is covered with felt, while rubber knobs are used on the single speed fan base.

### Blades

The blades are made of brass, dipped and lacquered. They are of generous size and adjusted to move the maximum amount of air consistent with quiet operation.

### Guards

The fan blade guards are heavy iron wire, electrically welded at each joint and point of contact. Note that one support is provided at the top of the guard where one usually grasps the fan to move it.

### Cord and Plug

All 9, 12 and 16 inch portable fans are provided with 8 feet of black flexible cord and an Edison base separable attachment plug.

### Finish

The standard finish of all oscillating and stationary portable fan motor bodies, stands and guards, is black enamel. The blades are made of brass, dipped and lacquered.

### Oscillating Speed

The oscillating fans have an oscillating mechanism which consists of a double worm gear, crank disc and connecting rod. The steel worms and the phosphor bronze gears are of substantial dimensions and are certain to give satisfactory results for many years. (See figure 515, page 6.) They are completely enclosed in a grease case which contains a high grade graphite grease, insuring smooth operation. A lever is provided to engage or disengage the oscillating mechanism.

These fans, when operating at full speed, will oscillate from four to six times per minute, depending upon the frequency of the circuit for which they are constructed. This rate of oscillating permits a maximum volume of air to be placed in motion and be noticeably effective at more distant points than with a greater number of oscillations.



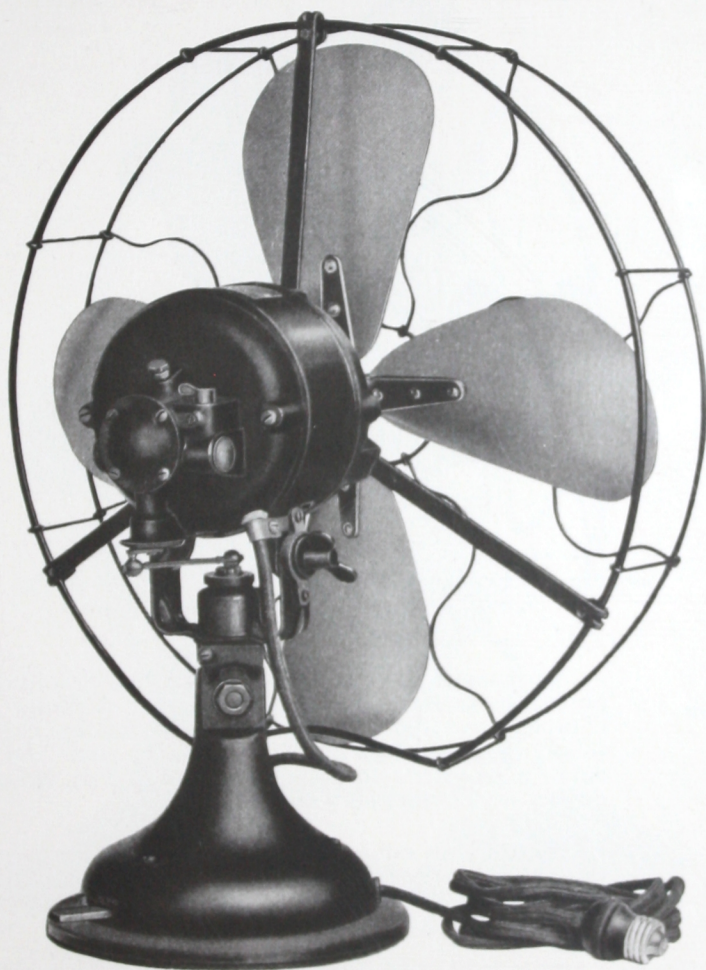


FIG. No. 514  
Illustrating the 16 inch Oscillating Fan



## ALTERNATING AND DIRECT CURRENT PORTABLE FANS

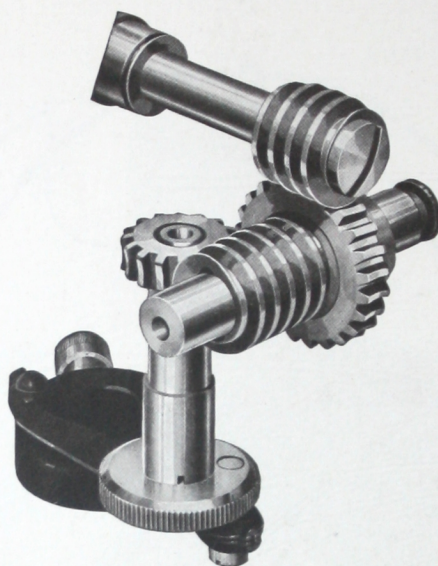


FIG. No. 515

Illustrating in approximately normal size, the Oscillating Mechanism, which is packed in grease, of 9, 12 and 16 inch Fans

### Range of Oscillation

Two ranges of oscillation may be secured by shifting the crank pin, the maximum being about 90 degrees. A change of direction of oscillation may be made without adjusting any part of the fan, simply by turning the fan on the swivel stud. An escapement device is provided to prevent damage should the fan oscillate into contact with a stationary object.

### Wall Mounting

*Century* Fans can be adjusted for mounting on the wall without extra parts. Instruction cards, attached to each fan, give full directions for this adjustment. A positive lock holds the motor at any desired position to which it may be tilted.

### Speed Regulation

All portable fans that are provided with a multiple point switch for speed regulation have the speed regulating coil located in the stand. The regulating coil reduces the current consumption approximately in the same proportion as the reduction in speed.

### Weight

The construction results in a fan comparatively light in weight, but secured without a sacrifice of active material. The 9 inch fan weighs approximately 12 pounds; the 12 inch fan 13 pounds, and the 16 inch fan 22 pounds, a little heavier, but still light enough to be easily moved from one place to another.



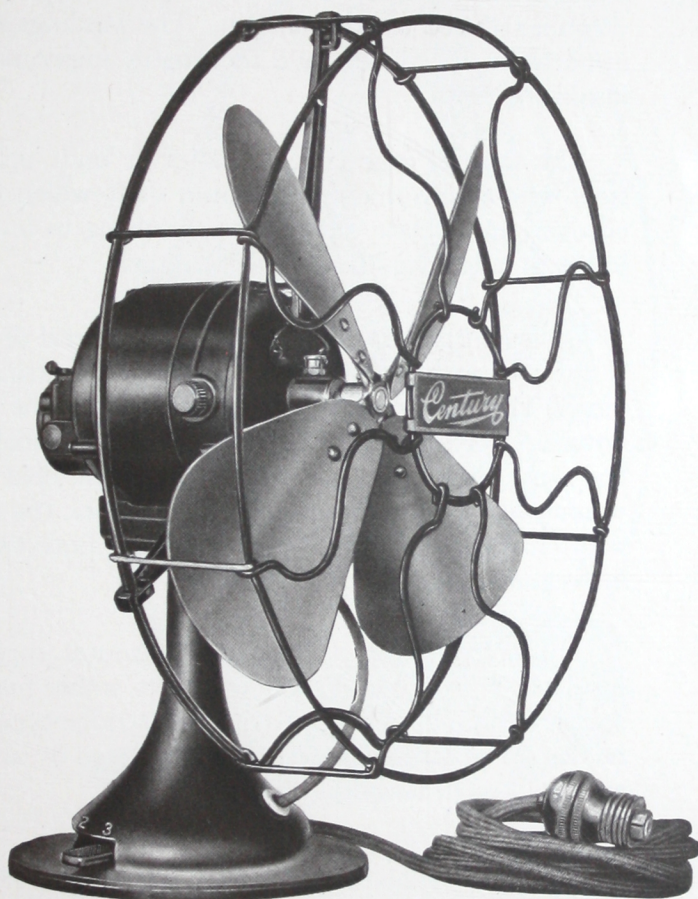


FIG. No. 516

Illustrating the 9 and 12 inch Direct Current Fans



## FAN MOTORS

### Alternating Current Fan Motor

The motors used for operating all *Catlow* alternating current fans are the induction type. As no moving wire is employed in their construction the possibility of breaking down is reduced to a minimum. The windings are placed in partially closed slots, and thoroughly impregnated with insulating paint.

The squirrel cage type of motor is built up of sheet steel laminations, mounted upon a shaft which is ground all over to accurate dimensions, resulting in low friction losses in, and long life to, the bearings.

### Direct Current Fan Motor

Direct current fans have the same general appearance as the corresponding sizes and types of alternating current fans. The motor is fully enclosed. Both the field and armature cores are built up of laminations punched from the same high grade of sheet steel. The field coils are wound with enamel and cotton covered wire, the armature with enamel and silk covered wire, and both thoroughly impregnated with insulating paint.

### Commutator Brushes

The commutator is built of horizontal copper bars, insulated with the best quality of soft amber mica. The square carbon brush is carried in a cartridge type of brush holder. The carbon brush may be removed by unscrewing an insulated head metal screw.

### Stationary Fans

The 9 inch and 12 inch direct current stationary fans are identical in construction with the multiple speed fans of similar sizes, excepting in these two sizes no switch or speed coil is provided. They are single speed fans. See Figure 517.



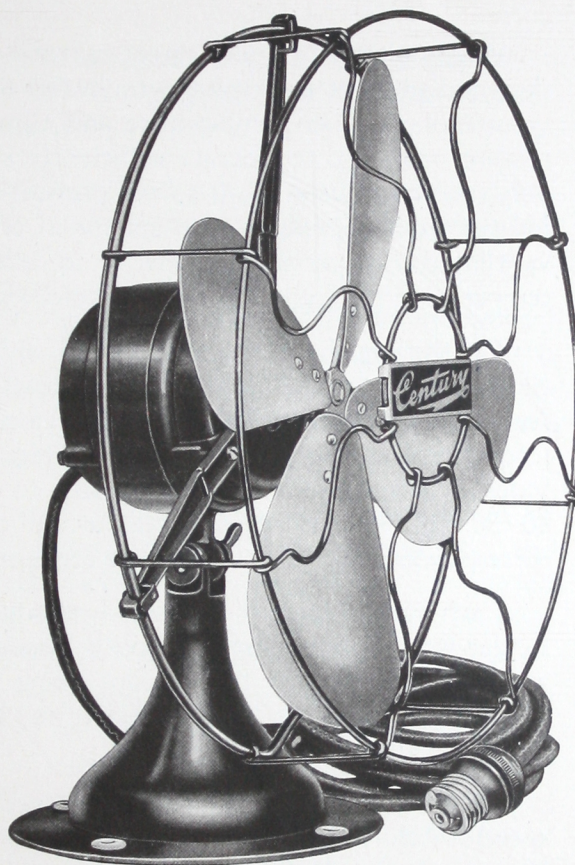


FIG. No. 517

Illustrating the 9 and 12 inch Single Speed Fans

The 9 and 12 inch Single Speed Fans are of the same high grade design, construction and finish as the other portable fans, but with the non-essentials to the movement of air left off—to meet the demand that higher priced fans cannot meet. While speed coil and switch are not provided, the same blades, guards, cord and plug are supplied as on the oscillating fans.



## ALTERNATING AND DIRECT CURRENT CEILING FANS

### Air Moved

*Century* alternating and direct current ceiling fans are designed to meet the demand for a fan to move a large volume of air when temperature and climatic conditions require, and also to operate sufficiently slow to provide only such circulation of air as will prevent discomfort and fatigue from oppressive atmosphere in crowded, poorly ventilated and over-warm rooms, or to cause a more even temperature throughout a room in cold weather.

### Speed Regulation

On the highest speed, the 25, 50, and 60 cycle and direct current fans will displace approximately 9,300 cubic feet of air per minute when operating on a circuit of normal frequency and voltage, while the speed regulating coil provides for a maximum reduction of 50% to 65% on 25, 30, 40, 50, and 60 cycle, and direct current circuits, with a corresponding reduction in current consumption.

### Construction

Each part is made of material best suited for the particular work it is to perform, and is inspected separately and as an assembled unit before being passed by our inspectors. Long life and uninterrupted service are the natural results.

### Switch Speed Coil

All ceiling fans are regularly equipped with a three-speed switch, which is located at the top of the fan where it cannot be easily damaged, together with a speed regulating coil of the auto-transformer type, which reduces the current consumption in approximately the same proportion as the reduction in speed.

### Wall Switch

The speed regulating coil may be mounted in, and a three-speed snap switch mounted on, a short cylindrical japanned iron box suitable for wall mounting, if desired. These are furnished at a small additional charge. Only two wires are necessary from the wall box to the fan. Such fans or equipment cannot be furnished from stock.



## ALTERNATING AND DIRECT CURRENT CEILING FANS

The wood blades are made of a carefully selected kiln dried stock, and have a highly polished mahogany finish. The blade's sweep is 58 inches.

**Blades**

The fan motor body and canopy are finished in black enamel, while the blade shanks and oil cup are finished in oxidized copper.

**Finish**

The bottom flange on the oil cup is drilled and tapped with  $\frac{1}{8}$  inch U. S. fixture threads to permit of the installation of electrolier arms, should they be desired. When the fan is shipped, the holes are plugged with screw plugs.

**Electroliers**

The vertical shaft is ground to accurate dimensions, so that there is no binding or sticking, and the weight of the rotor is supported on a ball bearing race, which is immersed in oil. A spiral oil groove is cut in the rotor bearing, which insures a constant and positive circulation of oil.

**Bearings  
Lubrication**

The oil cup is intended to carry three ounces (or six tablespoonfuls) of oil, which is sufficient to insure proper lubrication for at least a year's time. The oil cup may be removed for inspection or refilling by merely unscrewing it from its normal position without disturbing the fan in any way. (If wired for lights, such wires must be disconnected.)



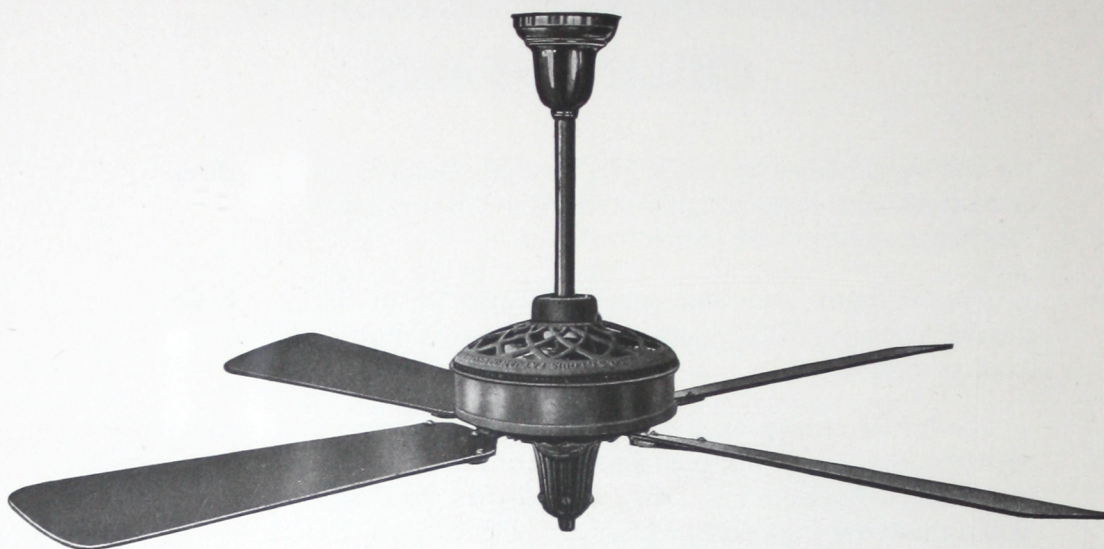


FIG. No. 518

Illustrating the 58 inch Ceiling Fans

#### Alternating Current Ceiling Fan Motor

The motors used in all *Century* alternating current ceiling fans are of the induction type. As no moving wire is employed in their construction, the possibility of breaking down is reduced to a minimum. The field is wound with enamel and cotton covered wire, placed in partially closed slots and thoroughly impregnated with insulating paint.

The rotor and stator are built up of laminations punched from the best grade of thin sheet steel.

#### Accessibility

Should occasion arise for dismantling the A. C. fan for cleaning or otherwise, by removing the oil cup and the fan blades, the armature of the A. C. ceiling fan may be removed and the field winding may be inspected without further dismantling the fan or removing the field from the hanger rod. The armature can be removed and replaced in approximately five minutes.



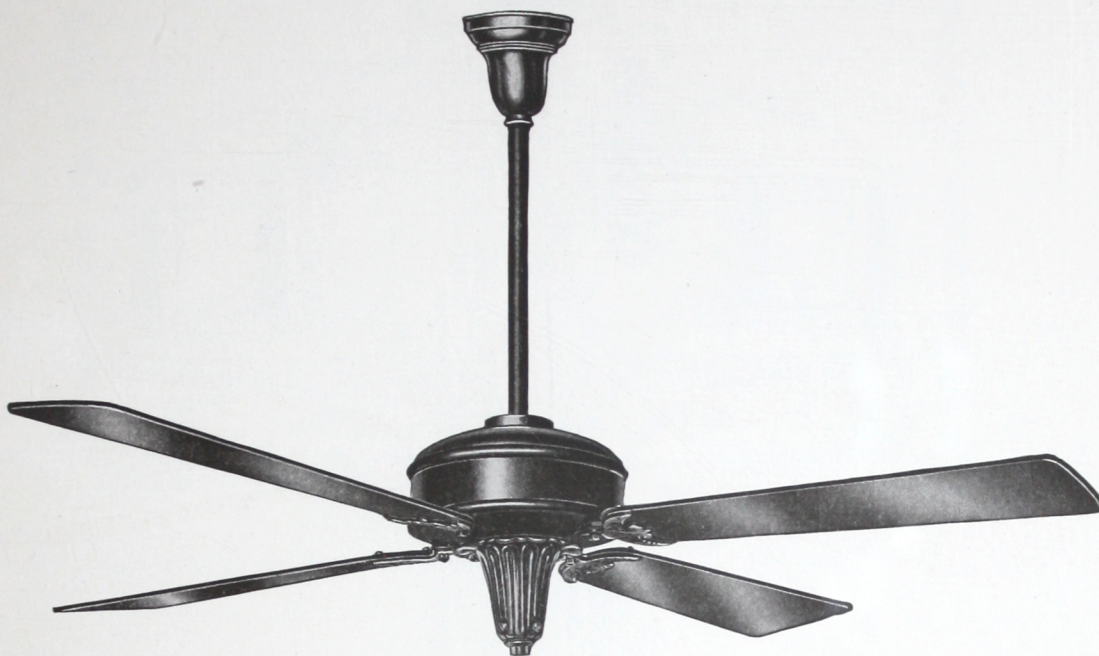


FIG. No. 519

Illustrating the 58 inch D. C. Ceiling Fan

The direct current ceiling fans have the same general appearance as the alternating current fans. The motor has four poles and is series wound. Both field and armature cores are built up of laminations punched from the same grade of thin sheet steel. Both armature and field coils are wound with cotton and enameled covered wire and thoroughly impregnated with insulating paint.

**Direct Current  
Ceiling Fan  
Motor**

The commutator is built of rolled copper bars, insulated with the best quality of soft amber mica. The two square carbon brushes are carried in cartridge type of brush holders. The carbon brush may be removed by unscrewing an insulated head metal screw.

**Commutator  
Brushes**

Should occasion arise for dismantling the D. C. fan for cleaning or otherwise, by removing the oil cup and the fan blades and the disc which supports them, the motor may be operated and brushes adjusted without further dismantling. Then by removing the armature supporting lock nut and the brush holder, the armature may be removed, leaving the field and field coils attached to the hanger rod.

**Accessibility**



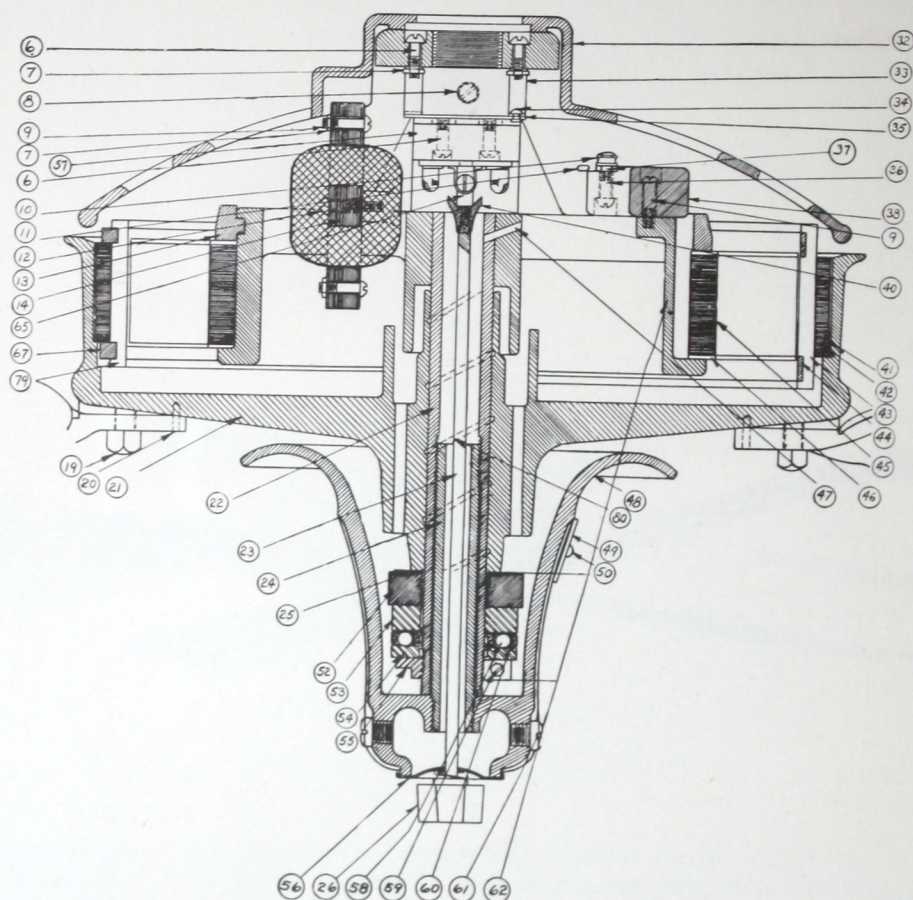


FIG. No. 520

A. C. Ceiling Fan General Assembly

- |                                |                                     |
|--------------------------------|-------------------------------------|
| 6. Round head iron screw.      | 43. Armature bars.                  |
| 7. Hexagon head brass nut.     | 44. Armature short circuiting ring. |
| 8. Headless set screws.        | 45. Field sheet steel laminations.  |
| 9. Round head iron screw.      | 46. Field fibre.                    |
| 10. Thumb nut.                 | 47. Taper pin.                      |
| 11. Terminal clips.            | 48. Oil cup.                        |
| 12. Round head iron screw.     | 49. Name plate.                     |
| 13. Field ring.                | 50. Name plate rivet.               |
| 14. Speed regulating coil.     | 52. Felt washer.                    |
| 19. Hexagon head cap screw.    | 53. Ball bearing washer—upper.      |
| 20. Blade shank dowel pin.     | 54. Ball bearing washer—lower.      |
| 21. Armature casting.          | 55. Lock nut.                       |
| 22. Armature shaft.            | 56. Oil cup washer.                 |
| 23. Switch stem.               | 57. 3 speed switch.                 |
| 24. Oil cup nipple.            | 58. 1/4 inch steel balls.           |
| 25. Ball bearing washer tube.  | 59. Fillister head screw.           |
| 26. Switch button.             | 60. Ball bearing cage.              |
| 32. Field cover.               | 61. Oil cup plugs.                  |
| 35. Switch stem adapter plate. | 62. Field castings.                 |
| 38. Porcelain terminal block.  | 65. Switch stem adapter.            |
| 40. Switch stem guide.         | 67. Armature short circuiting ring. |
| 41. Armature insulating strip. | 79. Armature bars.                  |
| 42. Armature iron.             | 80. Spiral oil groove.              |



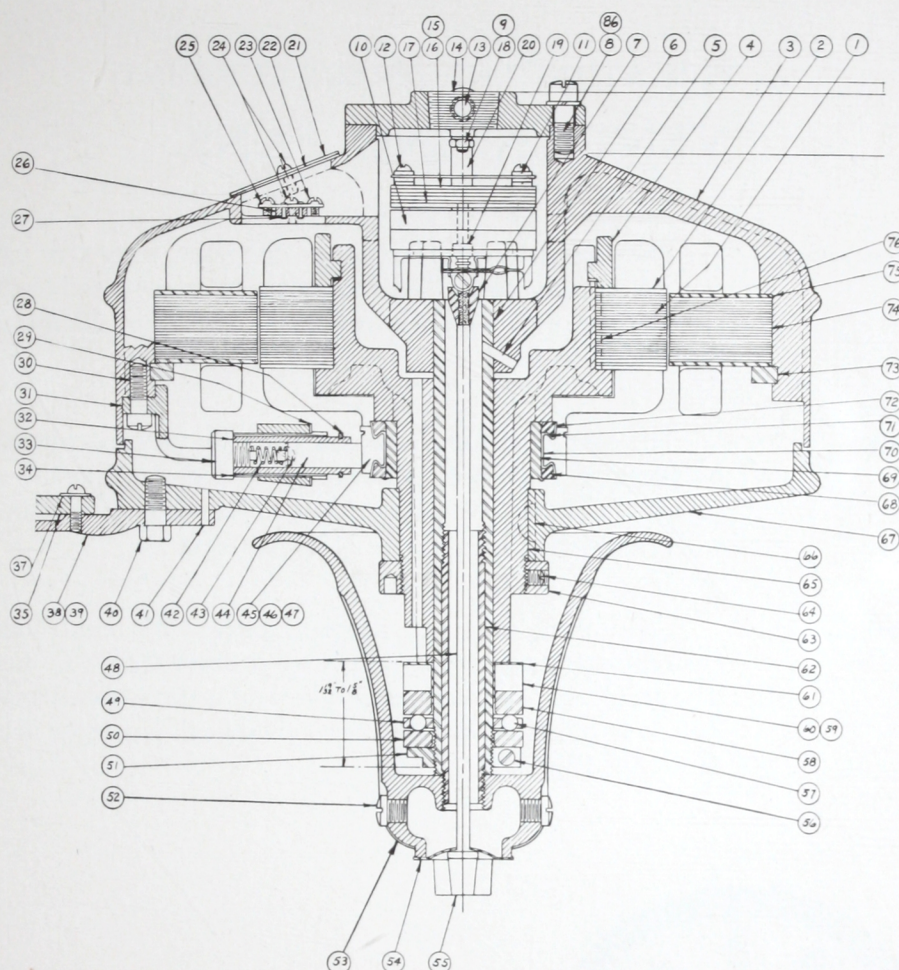


FIG. No. 521

D. C. Ceiling Fan General Assembly

- |   |   |   |
|---|---|---|
| 1. Armature iron.                         | 27. Terminal block rivets.              | 54. Oil cup washer.                     |
| 2. Armature fibre.                        | 28. Brush holder connector clip.        | 55. Switch handle.                      |
| 3. Frame.                                 | 29. Brush holder washer.                | 56. No. 8 x 32 x 5/8" fill head screw.  |
| 4. Armature ring.                         | 30. 1/4-20 x 3/4" fill head screw.      | 57. 1/4" steel balls.                   |
| 5. No. 2, 3/4" Morse taper pin.           | 31. Brush holder arm.                   | 58. Ball bearing washer (upper).        |
| 6. Shaft.                                 | 32. Brush holder.                       | 59. 5/16 felt washer.                   |
| 7. Switch stem guide.                     | 33. Brush holder screw.                 | 60. 5/8 felt washer.                    |
| 8. 5/16-18 x 3/4" fill head screw.        | 34. Brush holder insulator.             | 61. Ball bearing washer tube.           |
| 9. 8-32 hexagon nut (brass).              | 35. Fan blade.                          | 62. Oil cup nipple.                     |
| 10. Perkins switch, 3 speed.              | 37. No. 12 washer.                      | 63. Armature casting nut.               |
| 11. Fibre washer.                         | 38. Blade shank.                        | 64. 1/4 x 20 x 1/4" headless set screw. |
| 12. 8/32 x 5/8" round hd. mach. screw.    | 39. Reverse blade shank.                | 65. Armature casting.                   |
| 13. 5/16-18 x 1" headless set screw.      | 40. 5/16 x 18 x 3/4" hex. head screw.   | 66. Woodruff key.                       |
| 14. Frame cover.                          | 41. Blade shank pin.                    | 67. Fan blade disc.                     |
| 15. Resistance core.                      | 42. Brush spring.                       | 68. Commutator clamping ring.           |
| 16. Resistance separator.                 | 43. No. 10 x 24 x 1/4" fill head screw. | 69. Commutator hub.                     |
| 17. Switch adaptor plate.                 | 44. Carbon brush.                       | 70. Commutator hub insulator ring.      |
| 18. No. 8x32x5/8" round hd. mach. screw.  | 45. Commutator mica segment.            | 71. Commutator paper ring.              |
| 19. No. 8x32x1/2" round hd. mach. screw.  | 46. Commutator segment.                 | 72. Commutator insulator ring.          |
| 20. Switch support.                       | 47. Commutator assembly.                | 73. Field locking key.                  |
| 21. Terminal cover.                       | 48. Switch stem.                        | 74. Field irons.                        |
| 22. Terminal cover paper.                 | 49. Ball retainer.                      | 75. Field iron end piece.               |
| 23. No. 6x32x3/16" round hd. mach. screw. | 50. Ball bearing washer (lower).        | 76. Armature key.                       |
| 24. No. 8x32 round hd. mach. screw.       | 51. Lock nut.                           | 86. 5/16" lock washer.                  |
| 25. Terminal connector.                   | 52. Oil cup plug.                       |   |
| 26. Terminal block.                       | 53. Oil cup.                            |   |



## ALTERNATING AND DIRECT CURRENT VENTILATING FANS

**Construction**      The blades are 16 inches in diameter, only this one size being furnished. The fan motor body is bolted to the supporting ring, which is made of cast iron, 20 inches outside diameter.

**Motor**      The standard fully enclosed portable fan motor used on portable fans, both alternating and direct current, is supplied with the ventilating fan. The motor is supplied with flexible cord terminals 24 inches long.

**Controller**      Ventilating fans are supplied only with controller, the regulating coil being necessary to start the A. C. fan. The regulating coil is mounted in, and a three-speed snap switch is mounted on, a short cylindrical japanned iron box. See Fig. 523.

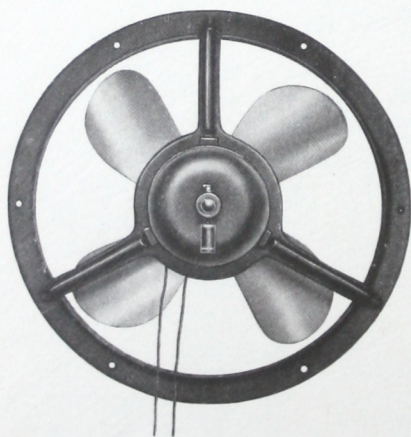


FIG. No. 522

Illustrating 16 inch Ventilating Fan

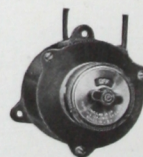


FIG. No. 523

Illustrating Controller for Ventilating Fan







